

UNITED STATES DEPARTMENT OF AGRICULTURE**FOOD AND NUTRITION SERVICE****Comment on Revisions to the WIC Food Packages****7 CFR 246****FR Doc. 03-23498**

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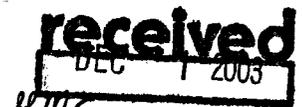
I. Introduction

I respectfully comment on the proposed revisions to the Women Infants and Children ("WIC") food packages, in response to the Advanced Notice of Proposed Rulemaking that appeared in the *Federal Register* on September 15, 2003. Although I am currently a third-year law student at Villanova University Law School, I submit these comments solely on my own behalf as the result of a keen personal interest in the area of women's health and nutrition. In addition, for the past several years, my family has been involved with activities at a local homeless shelter. I have had the opportunity to see first-hand the nutritional needs of low-income members of our community. I thank you for the opportunity to be heard on this issue.

My comment addresses three separate revisions to the WIC food packages, and can be summarized as follows:

1) Food Package VII: Breastfeeding Women

My comment suggests that the addition of soy-based dairy and cheese products to Food Package VII will assist breastfeeding mothers whose babies may be allergic to cow-based dairy products. As a mother who nursed three babies for a total of five years, I believe I have extensive practical experience to comment on this food package. In addition, I was involved with a nursing mothers' group that offered



nutritional information and assistance to nursing mothers who were having difficulties establishing a breastfeeding relationship with their babies. The insights that I learned during that time have provided me with the background necessary to effectively comment on the proposed changes to WIC's Food Package VII.

2) Food Package V: (Pregnant and Breastfeeding Women) and Food Package VI (Non-breastfeeding Postpartum Women)

I also suggest the addition of folic acid-rich foods to Food Package V and VI. My comment includes recent scientific research which suggests that the consumption of folic acid during a woman's pregnancy can greatly reduce the chance of neural tube defects in her newborn. I discuss specific examples of food types and quantities.

3) Food Package IV: Children Age 1 to 5

Finally, my comment suggests the introduction of fresh and dried fruit into Food Package IV. The introduction of this food can help serve the stated goal of reducing obesity in this particular population of WIC participants.

II. Background Information

Congress passed the Child Nutrition Act (42 U.S.C. 1786) in the early 1970's out of concern for the nutritional growth and development of low-income women and children. This Act authorizes the Department of Agriculture's Food and Nutrition Service ("FNS") to implement the Women, Infants and Children ("WIC") Program. WIC provides supplemental foods to low-income women and children for the purpose of providing specific nutrients critical to growth and development. WIC is not intended to serve as a primary food source for its population. The program divides participants into seven different nutritional categories:

- Food Package I: Infants 0 Through 3 Months
- Food Package II: Infants 4 Through 12 Months
- Food Package III: Children/Women with Special Dietary Needs
- Food Package IV: Children 1 to 5 Years
- Food Package V: Pregnant and Breastfeeding Women (Basic)
- Food Package VI: Non-breastfeeding Postpartum Women
- Food Package VII: Breastfeeding Women (Enhanced)

The seven current food packages are designed to help accomplish the following goals: 1) supplement participants' diets with foods that follow current nutritional guidelines; 2) complement eating habits of preschool-age children, and 3) address the special requirements of pregnant and breastfeeding women.

The foods that are included in each of these food packages were selected in the early 1980's, and the FNS now seeks comments to update the food packages to reflect current nutritional data. Additionally, food technology has resulted in a greater number of new foods that could be included in the packages. Any changes the FNS makes to the foods included in food packages must comport with regulations requiring that the food be economical and readily available in retail stores.

New problems have appeared in the WIC population since the last food package revisions. Some of these concerns include the sharp rise in childhood obesity in the WIC population, and the continued challenge of encouraging breastfeeding. This comment addresses these concerns.

III. Food Package VII-Breastfeeding Women: Inclusion of Soy-based Products

A. Benefits of Breastfeeding

The benefits of breastfeeding are widely acknowledged.¹ Each year, the American Academy of Pediatrics reiterates its position that breast milk is the preferred food for infants and babies during the first six to twelve months of life. Breast milk contains ingredients that scientists have yet to identify. It provides superior nutrition to infant formulas, and confers protection against allergies, infections and other diseases. Significantly, breast milk contains antibodies passed on from a mother's immune system to her baby when a specific illness is introduced into the mother and baby's environment. So, for example, if an older sibling or a spouse comes home with a cold or other illness, the mother will produce antibodies that can "target" the illness, and thus can provide unique protection for baby.

Nursing is beneficial to the new mother as well. Studies show that breastfeeding mothers typically get back into shape more quickly after pregnancy, and that nursing a baby helps protect against certain types of breast and ovarian cancer. In addition, nursing helps form strong emotional bonding between mother and infant. For these reasons, it is most desirable that WIC participants who are already identified as being "at nutritional risk" take advantage of the benefits of breastfeeding for their babies.

The legislative history of WIC is evidence of Congress's interest in promoting breastfeeding. Congress recognized the advantages of breastfeeding when it required the Secretary of Agriculture to establish a national breastfeeding promotion program to promote breastfeeding as the best method of infant nutrition, and to assist in the fostering of wider public acceptance of breastfeeding in the United States. (1992, P.L. 102-342.) WIC seeks to advance the cause of breastfeeding primarily through providing education, information and counseling for women who wish to be successful nursing mothers.

¹ For a comprehensive discussion of the benefits of breastfeeding, see THE WOMANLY ART OF BREASTFEEDING, La Leche League International, 1997 [*hereinafter* THE WOMANLY ART].

B. Obstacles to Breastfeeding

Despite the benefits of breastfeeding, many mothers do not nurse their infants, or nurse for only a short period of time. The reasons for this phenomenon are complex. First, new mothers often find that establishing breastfeeding with an infant is physically challenging. The techniques involved for successful breastfeeding are learned skills that become “natural” only after patience and practice. Nursing can be painful initially, especially if the infant is not “latching on” properly to the mother’s breast. It is also physically exhausting, and new mothers must ensure that they are getting the additional 500 calories required to produce the milk necessary to feed their infant. This is where nursing mothers support groups are helpful in providing information to first-time nursing mothers.

Second, breastfeeding is not generally embraced in American culture. Mothers may feel that breastfeeding in public is not an option for them, or they may face pressure to return to work quickly after the birth of a baby. Additionally, the ready availability of commercial formulas appears to provide an easy alternative to breastfeeding when a problem develops. Unless nursing mothers go into the breastfeeding experience armed with knowledge of potential problems, they may find it expeditious to stop breastfeeding and switch to formula.

C. How Food Package VII Can Be Redesigned to Help Support Breastfeeding

A frustration that nursing mothers often must deal with occurs when a baby reacts to something in the mother’s diet. This reaction in the baby requires that the mother alter her eating habits to avoid the offending food. A baby’s reaction under these circumstances can be quite alarming to a new mother, and can include diarrhea, vomiting after eating, constant fussiness, eczema, and bloating.² It is not surprising that a mother may react to her infant’s distress by abandoning the nursing relationship in favor of infant formulas. This is especially the case if the mother is not given proper advice about the cause of the problem or about potential solutions.

Dairy products consumed by the mother are frequently the cause of an allergic reaction in the baby. This occurs when the protein from the cow’s milk penetrates the allergic baby’s gastrointestinal tract. For this reason, lactation experts recommend eliminating dairy products first when a baby exhibits signs of food allergy.³ Yet a review of the WIC Food Package VII shows why this is potentially problematic for WIC mothers. Many of the protein-rich foods available to nursing mothers are dairy based, as shown by the chart below:

² NURSING MOTHER’S PROBLEM SOLVER, CLAIRE MARTIN, p. 26 (2000).

³ THE WOMANLY ART, *supra* note 1, at 356.

FOOD PACKAGE VII: Available Food Choices

Whole milk
Skim or low-fat milk
Buttermilk
Evaporated whole or skim milk
Dry whole, nonfat or lowfat milk
Cheese (assorted)
Eggs (or dried egg mix)
Cereals (hot or cold)
Juice
Legumes (dry beans, peas and peanut butter)
Fish (tuna)
Raw frozen or canned carrots

If the nursing mother were to eliminate all the dairy-based foods from her diet, she would be left with fewer protein alternatives at a time when nutritional options are most critical. Under these circumstances, a soy-based alternative to dairy products would provide a welcome addition to Food Package VII by providing nursing mothers with a milk substitute acceptable to both mother and baby.

D. Benefits of Soy

The health benefits of soy have received a lot of attention in recent years, and the initial scientific findings are impressive.⁴ Soy has been found to reduce the risk of heart disease, and in countries where soy products are eaten regularly, heart disease rates are comparatively lower. This is because soy can decrease total cholesterol and “bad” LDL cholesterol levels. “An analysis of 38 clinical studies published in *The New England Journal of Medicine* in 1995 found that consuming an average of 50 grams of soy per day lowered cholesterol by nine percent . . . lead[ing] to a 20 percent reduction in heart disease.”⁵ In addition, the consumption of soy has been linked to protection against breast and prostate cancers, osteoporosis, and diminished menopausal symptoms.

A cross-cultural study of Asian women and American women points to strong evidence regarding the widespread health benefits of soy consumption. The Asian diet has long been rich in soy foods like tofu, soy milk, miso, and soy flour. Statistics reveal that Asian women have significantly lower incidences of estrogen-related diseases, including cancer of the colon, breast, and lung. In addition, Asian women live longer, and have one of the lowest rates of cardiovascular disease.⁶ Scientists believe that this is due to soy’s antioxidant effects that serve to “inhibit the action of certain damaging compounds, help

⁴ See generally, THE SOY ZONE, BARRY SEARS, PH.D., 2000; see also SOY SMART HEALTH, NEIL SOLOMON, M.D., PH.D., 2000.

See THE SOY ZONE, *id.* at 8.

⁶ See SOY SMART HEALTH, *supra* note 4, at 48-9.

to normalize cell replication, keep hormones like estrogen from binding to breast tissue, lower cholesterol and have significant anti-tumor activity.”⁷

For the purpose of this comment, the most important benefit from the consumption of soy is that it supplies an alternative to dairy products for breastfeeding mothers whose babies are allergic to cow’s milk. If mothers have a safe alternative to dairy products, they will be less likely to abandon the nursing relationship altogether in favor of infant formula when such a problem develops.

Soy is safe.

Before adding soy to the list of foods for Food Package VII, it is important to establish that soy is a safe alternative for both mother and baby. The potential health benefits of soy have already been addressed for mother. But since widespread consumption of soy is a relatively new phenomenon, is it safe for infants?

Soy products contain phytoestrogens, or plant estrogens, that can work to both block and stimulate estrogen production. Scientists have expressed concern that an overabundance of soy in someone’s diet may actually interfere with a person’s normal hormonal balance, causing endocrine or reproductive problems, especially in young children.⁸ Of special concern are infants who are fed primarily with soy-based formulas, which came into use during the 1960’s. The soy-based infant formulas provided an alternative for infants allergic to cow’s milk. But in recent years, scientists have begun to raise some concern that these infant formulas may be too much of a good thing. These concerns have caused a decline in the exclusive use of soy-based formulas in the past few years. Further research is needed to determine the safety of using soy-based formulas exclusively.

Fortunately, there is quite a bit of research that concludes that soy consumed by a mother *is* safe for infants. Phytoestrogen concentrations in human breast milk are negligible, and even if the mother consumes soy foods, the concentration that passes through the breast milk is still low, especially when compared to the amount consumed by infants who are fed exclusively with soy infant formulas.⁹ “Scientists feel that there is little reason to be concerned about [soy] in breast milk from mother to infant. These compounds are seen as extremely weak and are not thought to cause any significant side effects in the nursing baby. Therefore, nursing mothers can still enjoy soy foods in reasonable amounts.”¹⁰ When used as a substitute to cow’s milk when a baby develops a dairy allergy, soy provides an excellent source of protein during lactation.

⁷ *Id.* at 49.

⁸ *See id.* at 45-46.

⁹ *See id.* at 154-55.

¹⁰ *See id.* at 155.

2. Soy is economical.

Among the criteria stated in the proposed rule is that any new foods in the WIC Food Packages must be economical. The food package recommendations should not increase the overall cost of the food package. Below is a summary of a cost comparison of soy and dairy products found at three local grocery stores in the Philadelphia area:

COST COMPARISON DATA

	<u>Soy Milk</u> (2 qt)	<u>Cow's Milk</u> (2 qt)	<u>Kraft's Singles</u> (16-slice pkg)	<u>Soy Cheese</u> (12-slice pkg)
Store #1	\$2.49	\$1.45	\$4.29	\$1.99
Store #2	\$2.49	\$1.49	\$2.49	\$2.99
Store #3	\$2.29	\$1.59	\$2.99	\$3.49

While the soy milk seems to be about one dollar more on average per half gallon, the soy cheese is comparable to cow's milk cheese. Given the benefits of soy milk to nursing mothers, this cost increase is negligible.

3. Soy is readily available in retail stores.

Another criterion for the introduction of new foods in the WIC food packages is that the foods must be readily available in retail stores. Since 1980, the availability of soy has greatly increased. Soy products, once the province of "fringe" health food stores, are now readily available in mainstream grocery stores. There are literally hundreds of soy products—from dairy substitutes, to meat substitutes—available on the market. As Americans seek out nutritional substitutes to high fat meat proteins, the price of soy products has declined as the availability has increased.

E. Conclusion

The addition of soy-based milk and cheese products to Food Package VII would help to address several of the stated goals of the WIC program. First, by offering a safe, economical and nutritious alternative to dairy products, the addition of soy would encourage nursing mothers to continue breastfeeding in the event that their baby is allergic to the mother's consumption of cow's milk. This alternative could enable the nursing mother to switch to soy-based products quickly, without jeopardizing nursing relationship. Next, soy products are highly beneficial for maternal health, and can provide a low fat, healthy dietary alternative. And finally, since soy is both economical and readily available in retail stores now, it meets the criteria for WIC food packages.

IV. **FOOD PACKAGE V-(Pregnant and Breastfeeding Women) and FOOD PACKAGE VI (Non-breastfeeding Postpartum Women): Inclusion of Folic Acid-Rich Foods**

The second suggestion I would like to make in this comment is that Food Package V for pregnant and breastfeeding women and Food Package VI for non-breastfeeding postpartum women should be enhanced with additional folic acid-rich foods. This suggestion is based on a finding that no WIC women receive enough folic acid in their diets.¹¹

A. The Benefits of Folic Acid

Compelling scientific research exists to prove that women who consume adequate amounts of folic acid can significantly reduce the chance of neural tube defects in their babies. Neural tube defects, or NTDs, are the most common form of disabling birth defect in the United States, affecting one to two infants per thousand births. NTDs include anencephaly and spina bifida.

Scientists began to hypothesize about the dietary causes of the disease in the 1950's, noting higher incidences of neural tube defects among low socioeconomic populations in which women had poorer diets. Additionally, babies conceived in the early spring and winter tended to have higher incidences of the disease, suggesting that a lack of fresh fruits and vegetables in early pregnancy was a possible cause. In the 1960's, scientists discovered that a lack of folic acid in the diets of certain animals caused birth defects. Thus, they concluded that folic acid plays a vital role in cell division and growth.¹²

It is estimated that women who have adequate amounts of folic acid in their diet can reduce the risk of birth defects in their children by as much as 75 percent. In 1991, British scientists discovered that even if a woman had already given birth to a baby with spina bifida, she could greatly reduce her future chances of passing along the disease simply by ingesting high doses of folic acid. The United States Public Health Service has recommended that all women of childbearing age ingest 400 micrograms of folic acid every day to reduce the risk of neural tube defects in pregnancy.

B. About Neural Tube Defects

Two of the most devastating forms of NTDs are anencephaly and spina bifida. Anencephaly is a condition in which the infant does not develop a brain, resulting in death shortly after birth. Spina bifida is a defect of the spinal column. If the vertebrae surrounding the spinal cord do not close properly during the first 28 days after conception, the spinal fluid may leak out, forming a bulge somewhere along the spinal column. Eighty-five to ninety percent of all children born with this disease can now live

¹¹ See Review of Nutritional Status of WIC Participants: December 1999, at ES-14, available at <http://www.usda.gov/cnpp/pubs/WIC>.

¹² See <http://www.babybag.com/articles/wh-folic.htm>.

to adulthood, but many are still left with crippling paralysis if they suffer from the more acute form of the disease known as spina bifida aperta. In this condition, a small sack of fluid, called a myelocoele, is formed on the child's back, and causes incontinence and paralysis. The severity of the paralysis depends upon the location of the sac along the spinal column.

NTD's may be detected very early in pregnancy thanks to advances in medical diagnostic tests. One widely-used test is called the maternal serum alpha-fetoprotein (AFP) test. This test, approved by the FDA in the early 1980's, checks the mother's blood for AFP at sixteen to eighteen weeks of pregnancy. AFP is a substance produced by the fetus that is present in the amniotic fluid, and ultimately enters the mother's bloodstream. If abnormally high levels of AFP are detected, then it *may* indicate that the baby has a neural tube defect. Doctors caution, however, that the test can give false positives, especially if the woman is carrying twins. Additionally, when high levels of AFP are indicated, a NTD is present only ten percent of the time. Further testing is then required to establish the presence of a NTD with greater certainty. This leads to the conclusion that the best weapon in the fight against NTDs is prevention.

Children born with neural tube defects endure many physical and emotional challenges. In addition to paralysis and incontinence, children may also have to undergo several surgeries in the first years of life and beyond to correct problems that will arise as a result of the defect. They will also face the humiliation of incontinence, and the pain of chronic bladder and kidney infections. Given the severity of these birth defects, it is critical that members of the WIC population can benefit from the potent and dramatic effects of folic acid.

C. Folic Acid Augmentation

How Much is Enough?

The Spina Bifida Association of America (SBAA) follows the U.S. Public Health Service's recommendation on folic acid intake. That recommendation is as follows:

- Women who could become pregnant should take 400 micrograms of folic acid through a vitamin.
- Women's dietary habits should be improved to augment folic acid intake.
- Non-pregnant adults should take 200 micrograms of folic acid through either a vitamin supplement or through diet.

2. Types of Folic Acid.

There are two different forms of folic acid, synthetic and natural. Synthetic folic acid is found in multivitamins and fortified breads and cereals. The natural form of folic acid is called "folate." Humans tend to absorb the synthetic form of folic acid more easily than the natural form. For that reason, it may be necessary to consume greater quantities of natural folate to derive equivalent benefits from its vitamin form. While a diet rich in

folic acid is important, it is generally recognized that the average American diet does not contain enough folic acid.¹³ The following chart summarizes sources of folate.

Food Source	Micrograms of Folic Acid/3.5 oz. food
Fortified Cereal	100-200
Dark green leafy vegetables	120-160
Other vegetables	40-100
Citrus Fruits	50-100
Beans	50-300

In 1998, the Food and Drug Administration (FDA), responding to the reported health benefits of folic acid, began a campaign to fortify certain foods with folic acid. The agency action was based upon a U.S. Department of Agriculture study estimating that women of childbearing age ingested only half of the daily recommended amount of folic acid. Under the fortification campaign, FDA now requires that breads, flours, corn meal, rice, noodles and other grain products be fortified with folic acid.¹⁴

There is reason to believe that the fortification campaign has successfully reduced the incidence of NTDs by as much as 19% since 1998. Yet scientists express concern that the fortification of foods may increase folic acid to dangerous levels. This, in turn, could lead to other health-related problems like pernicious anemia. For that reason, the FDA rule is designed to keep total folic acid intake under the 1 milligram per day recommendation.

3. The Timing Concern

A major obstacle for implementing a successful folic acid regimen is that, in order to be successful, folic acid must be taken very early in pregnancy. NTDs will develop between the eighteenth and the thirtieth day after fertilization. If folic acid levels are not sufficient at this stage, it is too late for the developing fetus to receive the benefits of the folic acid. Unfortunately, many women do not even know that they are pregnant at this early stage. To avoid this problem, it is suggested that women begin taking pre-natal vitamins several months before they plan to become pregnant. Vitamins are not always a solution, however, because the vitamins may be costly and may not be taken with regularity.

If a pregnancy is unplanned, it is even less likely that the levels of folic acid in the pregnant woman's system are adequate to provide any benefit. If the woman has not been taking a vitamin supplement, then she must rely on diet alone to provide the adequate amount of folic acid. Unfortunately, folic acid is found in a just a handful of

¹³ See http://www.sbaa.org/html/sbaa_folic.html.

See <http://www.babybag.com/articles/wh-folic.htm>.

foods. Additionally, those foods are not represented in great variety in Food Package V, and are represented even less in Food Package VI. The following is a general summary of foods available in Food Package V and VI that contain folic acid.

FOOD	FOLIC ACID
Dairy products	None
Cereals (fortified)	Yes
Juices	Depends (citrus juice only)
Beans	*Depends
Cheese	None
Eggs	Yes
Peanut butter	*Yes

(*Food Package VI does not contain peanut butter or beans.)

4. What Foods Should Be Added to Food Package V and VI?

To maximize the benefit of folic acid for pregnant WIC participants, Food Package V and VI should be enhanced to include spinach and dark green leafy vegetables, broccoli, and fresh citrus fruit. Beyond the folic acid benefits, these foods can enhance a pregnant woman's natural vitamin intake, such as vitamin C. Citrus fruits like oranges and grapefruits can also serve the benefit of providing low calorie, nutritious alternatives to sugary snack foods. At a time when every calorie should be as nutritious as possible, a pregnant WIC participant should be able to turn to fresh fruits and vegetables to provide additional nutritious calories.

5. Are these foods economical and readily available?

In the past, food packages have not routinely included fresh fruits and vegetables. The limited exception to this is found in Food Package VII, which allows fresh carrots for nursing mothers. The belief was that fresh fruits and vegetables were too difficult to obtain, and there was too much price variation, making the choices uneconomical. This rationale should give way to the overriding benefits of fresh fruits and vegetables in a pregnant woman's diet.

First, fresh fruits and vegetables are readily available in today's marketplace. Second, fruits and vegetables have become quite economical. The USDA Recommended Daily Allowance (RDA) suggests that everyone should try to eat five servings of fruits and vegetables daily. After comparison shopping the price of oranges, apples and grapefruit at three area grocery stores, a serving of fresh fruit is between thirty-three and fifty cents—less than the cost of a candy bar! Similarly, a serving of fresh spinach or dark leafy green lettuce is approximately twenty-five cents per serving.

Finally, the addition of fresh fruits and vegetables to a diet provides other health benefits beyond the folate supplementation. Fruits and vegetables help in the fight against obesity, heart disease and, in some studies, cancer too.¹⁵

D. Conclusion: Food Package VIII?

The addition of some of these folic acid-rich foods to Food Package V and VI may not solve the problem of NTDs entirely. The only way to guarantee that the benefits of folic acid will be achieved for all pregnancies is to offer folic acid-rich foods to all women of child-bearing age.

The best solution, therefore, is the addition of a separate food package offered to all women of childbearing age. This package could include folic acid-rich foods such as spinach, dark green leafy vegetables, broccoli and citrus fruit. Although this may seem like a costly suggestion, the alternative of treating babies born with NTDs is much more expensive in the long run. If this is not economically feasible, then education about the benefits of folic acid along with enhanced folic acid-rich foods for Food Package V and VI should go a long way towards furthering the goal of providing the benefits of folic acid to all pregnant women who participate in the WIC program.

V. **FOOD PACKAGE IV-Children 1 to 5: Inclusion of Fresh and Dried Fruit**

This section of my comment advocates the addition of fresh and dried fruit to Food Package IV to help address the problem of childhood obesity among WIC participants.

A. Obesity Trend among American Children

Obesity is on the rise in the United States.¹⁶ The trend extends to children as well. The Center for Disease Control (“CDC”) released the following alarming statistics in 2000:

- For non-Hispanic whites, 12 percent of boys and 11.6 percent of girls age 6 to 11 are overweight.
- For non-Hispanic blacks, 17.1 percent of boys and 22.2 percent of girls age 6 to 11 are overweight.
- For Mexican American, 27.3 percent of boys and 19.6 percent of girls age 6-11 are overweight.
- Based on data from the 1999-2000 statistics, the prevalence of overweight children ages 6 to 11 was approximately 12% higher compared with similar data from 1963-1965.¹⁷

¹⁵ Some of these studies are discussed below in Section V of this comment.

¹⁶ See generally, TRIM KIDS, MELINDA S. SOTHERN, PH.D., ET AL. (2001).

¹⁷ See American Heart Association, available at <http://www.americanheart.org/presenter.jhtml?identifier=4670>.

In attempting to explain the trend, researchers have identified several variables that may contribute to the recent upswing in childhood obesity.¹⁸ While genetic factors are certainly important, environmental factors are equally to blame. In fact, some research argues that family environment has the greatest impact on children's weight gain.¹⁹ In addition, cultural patterns have changed in the last 30 years, and children are becoming less active. More time is spent in passive activities, such as watching television and playing video games. Consequently, less time is spent in active play, riding bikes or playing backyard tag.²⁰ Additionally, the fast food culture bombards the American child with poor food choices. A serving of french fries, for example, contains 25 grams of fat and 550 calories! These foods tend to replace healthier foods such as fruits, whole grains and vegetables.

1 Obesity among Low-Income Children

While childhood obesity rates are rising in all socioeconomic spheres, the rates seem to be particularly alarming among children from low socioeconomic backgrounds. This may seem paradoxical, since many of these children live in homes where there is not *enough* food to eat. Yet, as researchers point out, "poor children may be mildly undernourished and still gain weight if their diets are insufficient in nutrients."²¹ Statistics from the National Center for Health Statistics show that from 1992 to 1998, overweight prevalence among children enrolled in WIC increased twenty percent over this six-year period.

In an attempt to explain this phenomenon, nineteen WIC nutrition counselors undertook a study of WIC participants in Kentucky to determine what kind of counseling could effectively help the problem of childhood obesity.²² The study examined the health care professionals' perceptions about the challenges of preventing childhood obesity. The data were analyzed and separated into three overall domains. The first domain examined how the health care professionals perceived the attitudes and behaviors of the mothers who were counseled. They found that mothers were focused on surviving daily life, that they used food to cope with stress, that they had difficulty setting food limits with their children, that they did not perceive that their children were overweight, and that they lacked knowledge about normal childhood eating behavior.²³

¹⁸ See TRIM KIDS, *supra* note 15, at 3-7 (2001).

¹⁹ See *id.*

²⁰ *Id.* at 13.

²¹ See http://nutrition.tufts.edu/consumer/hunger/hunger_and_obesity.html.

²² See <http://ncbi.nlm.nih.gov/entrez/query>.

²³ See *id.*

The second domain reported on the interaction between WIC health care professionals and WIC participants. The health care professionals reported feeling concern about offending mothers when discussing their children's weight problems, and that their nutrition advice often conflicted with advice from family members, friends, or primary care physicians.

Finally, the third domain described suggestions for program improvement to address childhood obesity. These included trying to establish small behavioral changes that the mother could endorse, working with the primary care physician to create uniformity to obesity counseling, and promoting a more client-centered approach to counseling.

This study underscores the unique position of the WIC program to effect positive change in the lives of the WIC participants. The above suggestions focus on the counseling function of WIC. With a redesign of the food packages, WIC can further aid in the prevention of childhood obesity.

B. Health Issues and Obesity in Children

1 Physical Problems

It is no secret that childhood obesity is a major factor in the development of many diseases. The following is a list of physical problems that have been found in obese children:

- diabetes
- heart disease
- high cholesterol
- high blood pressure
- orthopedic abnormalities
- endocrinopathies
- premature onset of puberty
- hypoventilation
- skin disorders
- premature morbidity and mortality²⁴

Given the potentially devastating nature of these diseases, it makes sense to address the problem of obesity early in a child's life. Education, good nutrition and exercise play an important role in helping to avoid the problem of obesity before it starts.

²⁴ See *Understanding Obesity in Youth*, available at <http://circ.ahajournals.org/cgi/content/full/94/12/3383>.

While physical effects of obesity can be life-threatening, there are many psychological effects that can be equally devastating to a young child. Consider the following from a ten year-old boy: "People were mean to me. They told me I was the fattest dude in the world, and they always picked on me. I felt pretty bad . . . I was afraid people would call me names."²⁵ Significant obesity is linked to social stigmatization and poor self-image, especially in a culture that rewards leanness and punishes obesity.²⁶

The adverse social and psychological effects of obesity are widely recognized; yet for WIC children, the effects can be especially difficult. These children must struggle against the double stigma of obesity and poverty. Against this backdrop of physical and emotional pain, it becomes imperative for WIC to redesign its food packages with the goal of helping to prevent childhood obesity.

C. Prevention and Treatment

Most researchers agree that primary prevention is the key to avoiding obesity.²⁷ It is easier to prevent obesity than to try to remedy it after the fact, because studies show that between eighty and ninety percent of children return to their original weight after dieting.²⁸ Prevention is aided by factors such as regular physical activity and careful attention to a nutritious diet. Surprisingly, many nutritionists suggest small permanent changes to one's lifestyle instead of drastic changes. Smaller changes could include cutting out dessert, or taking the stairs instead of the elevator.

1. Simple Changes: Adding Fruit

Minor changes go a long way toward reducing obesity. One change that is easy to implement is the addition of more fruit to a child's diet. "After the age of two, when the diet becomes progressively more varied and includes foods prepared both in and out of the home, a gradual transition to a heart-healthy diet can be accomplished by replacing foods rich in fat with grains, fruits, lean meat, and other foods low in fat and high in complex carbohydrates and protein."²⁹

WIC has a unique opportunity to help reduce childhood obesity by adding fruit to Food Package IV. Adding fresh and dried fruits to Food Package IV as per the USDA's five

²⁵ See TRIM KIDS, *supra* note 15, at 14.

²⁶ See *Understanding Obesity in Youth*, *supra* note 23.

²⁷ See *id.*

²⁸ See *id.*

²⁹ See *Nutrition and Children*, available at <http://circ.ahajournals.org/cgi/content/full/95/9/2332>.

servings per day rule offers an effective, readily-available and economical weapon to help in the fight against childhood obesity.³⁰

2. Health benefits

The health benefits of fruit are widely recognized. A diet rich in fruit can decrease the risk of cancer, heart disease and stroke.³¹ Vitamins A, C and E present in cantaloupe, apricots and citrus fruits are known as the antioxidant vitamins, and may reduce cell damage. Fruit also contains fiber. Fiber is the part of the food that is not easily digested or absorbed. The benefits of fiber include stabilizing blood sugar fluctuations, lowering the level of blood cholesterol, and promoting a feeling of fullness.³²

One of the greatest benefits of a fruit-rich diet is that it helps in the fight against obesity. In 2000, the USDA's Economic Research Service examined the relationship between fruit consumption and obesity in children.³³ The study surveyed 2,181 children age five to twelve. The study found that overweight children consumed significantly less fruit than their healthy-weight counterparts. The researchers theorized that fruit provided the healthy-weight children with a sweet alternative to sugary desserts and high calorie snacks.

3. Conclusion

There are numerous benefits to eating a diet rich in fresh fruit. Inclusion of fruit in Food Package IV would help establish healthy eating and snacking habits in young children. By intervening at an early age, it is hoped that these habit will last a lifetime.

VI. CONCLUSION: WIC as Unique Agent for Change

All of the suggestions made in this comment meet the criteria for addition of foods to WIC Food Packages. The addition of soy products to Food Package VII will help the breastfeeding participant who wishes to avoid dairy products while nursing. Soy is both economical and readily available today. The addition of folic acid-rich foods to Food Package V and VI will increase folic acid intake in pregnant women seeking to reduce the risk of NTDs during pregnancy. The benefits of adding such foods far outweigh any short-term costs. Finally, by adding fruit to Food Package IV, WIC introduces healthy choices into the diets of children, and helps in the fight against childhood obesity. Thank you for your kind attention to this comment.

³⁰ USDA RDA serving size ½ c. fruit juice or 1 medium-sized piece of fruit. This information is available at <http://www.americanheart.org/presenter.jhtml?identifier=4774>.

See TRIM KIDS, *supra* note 15, at 162.

³² *See id.* at 36.

³³ *See Higher Fruit Consumption Linked With Lower Body Mass Index*, available at [http://www.ers.usda.gov/publications/Food Review/ DEC2002/frvol25i3d.pdf](http://www.ers.usda.gov/publications/Food%20Review/DEC2002/frvol25i3d.pdf).